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Mary Nichols, Chairman of the Board
All Boardmembers
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Subject: Recommendations To Improve Air Quality And Reduce Cancer Risk To Communities Surrounding California Rail Yards

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As requested by East Yard Communities for Environmental Justice, Soil / Water / Air Protection Enterprise (SWAPE) has prepared the following comments on the "Technical Options To Achieve Additional Emissions And Risk Reductions From California Locomotives And Rail Yards" prepared by the California Air Resources Board (CARB) dated August, 2009. In addition to the "Technical Options To Achieve Additional Emissions And Risk Reductions From California Locomotives And Rail Yards" from CARB, SWAPE reviewed the following documents:

1. Health Risk Assessment for the BNSF Railroad San Bernardino Rail Yard, dated June 2008
2. Health Risk Assessment for the Four Commerce Railyards, dated November 2007
3. Health Risk Assessment for the BNSF Railroad Commerce Eastern Rail Yard, dated November 2007
4. Health Risk Assessment for the BNSF Railroad Hobart Rail Yard, dated November 2007
5. Health Risk Assessment for the BNSF Railroad Sheila Mechanical Rail Yard, dated November 2007
6. Health Risk Assessment for the Union Pacific Railroad Commerce Rail Yard, dated November 2007
7. Diesel Particulate Matter Mitigation Plan for the BNSF Railroad San Bernardino Rail Yard, dated August 2008
8. Diesel Particulate Matter Mitigation Plan for the BNSF Commerce Eastern Rail Yard, dated September 2008
9. Diesel Particulate Matter Mitigation Plan for the BNSF Hobart Rail Yard, dated September 2008
10. Diesel Particulate Matter Mitigation Plan for the BNSF Railway Sheila Mechanical Rail Yard, dated September 2008

11. Diesel Particulate Matter Mitigation Plan for the Union Pacific Railroad Commerce Rail Yard, dated August 2008
12. Recommendations to Implement Further Locomotive and Railyard Emissions Reductions, dated September 2009
13. BNSF Railway, 2009. BNSF Railway's Kansas City Intermodal Project. De Soto EDC Meeting. De Soto, Kansas dated March 2009.

SWAPE's review of the materials in no way constitutes a validation of the conclusions or the materials contained within those documents. If we do not comment on a specific item this does not constitute acceptance of the item. We reserve the right to provide supplemental comments at a later date, following additional review of the documents.

GENERAL COMMENTS

1. **Human Health Risk Assessments (HHRAs) prepared of 18 existing major intermodal and classification rail yards clearly demonstrate that there are ongoing adverse health impacts from rail yard emissions. The sources of emissions at the rail yards have been well documented. Current draft mitigations plans are insufficient and do not significantly reduce emissions, especially in the short term.**

2. **There are a number of existing options (specifically 1, 2, 5, 7, 11, 21, 35, 36, and 37) that will reduce criteria PM and nitrous oxides emissions and the health risk associated with rail yard emissions to the surrounding communities that are feasible, cost effective, and easily implementable.**

3. **Risk reduction estimates contained in the "Technical Options To Achieve Additional Emissions And Risk Reductions From California Locomotives And Rail Yards" may rely on inaccurate estimates of rail yard use growth and risk reductions.**

Deficiencies noted above need to be addressed in a timely manner to ensure that the impacts from rail yards are reduced to acceptable levels.

In Support Of Comment 1: Human Health Risk Assessments (HHRAs) prepared of existing rail yards (including but not limited to the four Commerce rail yards and BNSF Railway Co. San Bernardino rail yard), clearly demonstrate that there are ongoing adverse health impacts from rail yard PM and air toxic emissions. The sources of emissions at the rail yards have been well documented. Current draft mitigations plans are insufficient and do not significantly reduce emissions, especially in the short term.

In the HHRAs prepared for the rail yards, CARB has clearly demonstrated that the cancer risk from emissions at the rail yards result in an unacceptable cancer health risk to the surrounding communities (greater than 1 in 1,000,000 risk). In 1990, Congress adopted a one in one million threshold in Section 112 of the Clean Air Act, which requires the United States Environmental Protection Agency (EPA) to issue technology-based emission standards to reduce emissions of hazardous air pollutants, and further requires the EPA to consider issuing residual risk emission standards if the excess cancer risk to the individual most exposed to such emissions would

exceed the one in one million risk level The cancer risk level set forth in South Coast Air Quality Management (SCAQMD) Rule 1402 is 25 in one million.

The documented emissions from California rail yards exceed these thresholds by several orders of magnitude. Maximum incremental cancer risk over 70 years as high as 3,300 in one million (BNSF San Bernardino rail yard). For the four Commerce railyards, the point of maximum impact (northwest and south of the UP Commerce and BNSF Hobart rail yards) has an associated cancer risk of 3,000 chances in a million.

Over three million people are exposed statewide to excess cancer risk of at least 10 in one million. According to the CARB, for example, emissions from the BNSF San Bernardino Rail Yard increase cancer risk to 10 in a million for 340,000 residents. (CARB, 2009.)

All 18 major California intermodal and classification railyards are significant PM and NOx emitters and responsible for significantly elevated cancer risk. (CARB, 2009.) Locomotives alone accounted for 4.8 tpd PM and 158 tpd NOx in California in 2005. (CARB, 2009.)

Significant diesel PM and NOx sources at the railyards documented by CARB include locomotives, heavy duty diesel trucks, cargo handling equipment and refrigerated units. In 2005, the distribution of California rail yard diesel PM emissions sources was: locomotives (39%), heavy duty diesel trucks (27%) , cargo handling equipment (22%) and refrigerated units (11%). (CARB, 2009.)

The HHRAs also demonstrate that for each of the communities affected by railway emission, a large percentage of the population at risk includes the elderly, the immune-compromised, and children (sensitive receptors). By way of example, around the BNSF San Bernardino Rail Yard, there are at least 41 locations with sensitive receptors, such as the Ramona-Alessandro Elementary School (670 Ramona Avenue, San Bernardino) that has a student body of 825, exposed to cancer risk ranging from over 500 to 25 in a million (Figure 1, 2, CARB, 2008). Similarly, there are at least 45 sensitive receptors exposed to cancer risk ranging from over 500 to 50 in a million at the four Commerce Rail Yards (Figure 2, 3, CARB, 2007). The high exposure of these sensitive receptors requires immediate action.

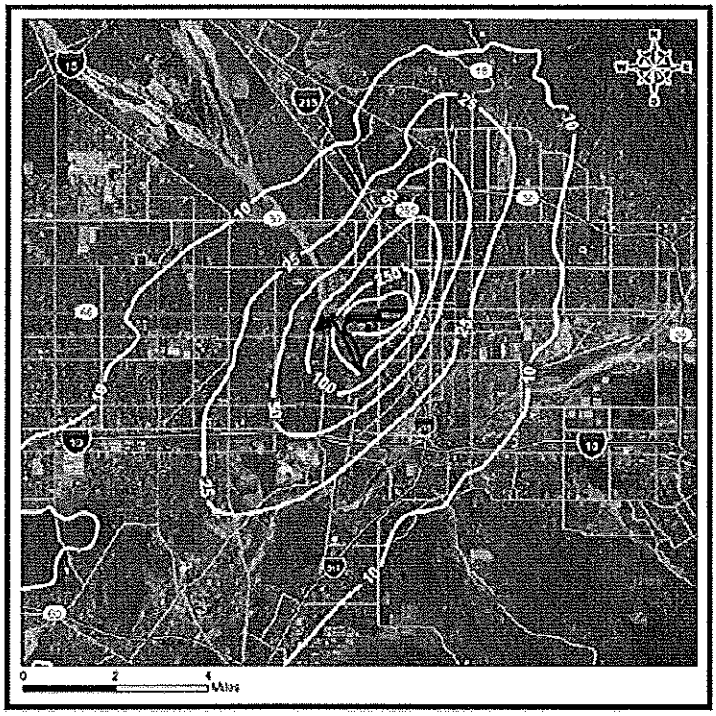

Figure 1: Estimated regional cancer risk (chances in a million) from the BNSF San Bernardino Rail Yard (CARB, 2008)

Figure 2: Location of sensitive receptors in relation to approximate one mile radius of BNSF San Bernardino Rail Yard

Table 1: Partial listing of sensitive receptors in one mile radius of BNSF San Bernardino Rail Yard

Sensitive Receptor	Description	Location
Civic Circle Pre-School	Preschool	265 N. D St, San Bernardino, 92401
St. John's Lutheran Preschool	Preschool	850 N. La Cadena Dr, Colton, 92324
Temple Learning Center	PreK-12 Private School	1777 W. Base Line St, San Bernardino, 92411

Peppercreek School	K-12 Private School	304 N. Pepper Ave, Rialto, 92376
Eagle Valley School	Grades 5-12 Private School	1053 N. D St, San Bernardino, 92410
Mt. Vernon Elementary School	Elementary School	1271 W. 10th St, San Bernardino, 92411
Ramona-Alessandro Elementary School	Elementary School	670 Ramona Ave, San Bernardino, 92411
Lytle Creek Elementary	Elementary School	275 S. K St, San Bernardino, 92410
Juanita Blakely Jones Elementary School	Elementary School	700 N. F St, San Bernardino, 92410
Myers Elementary School	Elementary School	975 N. Meridian Ave, Rialto, 92376
Bemis Elementary School	Elementary School	774 E. Etiwanda Ave, Rialto, 92376
Kelley Elementary School	Elementary School	380 S. Meridian Ave, Rialto, 92376
William McKinley Elementary School	Elementary School	600 W. Johnson St, Colton, 92324
Urbita Elementary School	Elementary School	771 S. J St, San Bernardino, 92410
Alice Birney Elementary School	Elementary School	1050 E. Olive St, Colton, 92324
Abraham Lincoln Elementary School	Elementary School	444 E. Olive St, Colton, 92324
Ulysses Grant Elementary School	Elementary School	550 W. Olive St, Colton, 92324
Richardson Prepatory Hi School	Middle School	455 S. K St, San Bernardino, 92410
Colton Middle School	Middle School	670 W. Laurel St, Colton, 92324
Arroyo Valley High School	High School	1881 W. Base Line St, San Bernardino, 92411
Middle College High School	High School	701 S. Mt. Vernon Ave, San Bernardino, 92410
Rhema College	College	118 S. Arrowhead Ave, San Bernardino, 92408
San Bernardino Valley College	College	701 S. Mt. Vernon Ave, San Bernardino, 92410
Genesis 8 Learning Center	Supplemental Education Center	7480 Sterling, San Bernardino, 92410
Project Life Impact	Community Center	468 W. 5th St, San Bernardino, 92401
Head Start H Street	Child Care Facility	342 N. H St, San Bernardino, 92410
Head Start: Westside Annex	Child Care Facility	1584 W. Base Line St, San Bernardino, 92411
Head Start Boys and Girls Club	Child Care Facility	1180 W. 9th St, San Bernardino, 92411
San Bernardino West Head Start	Child Care Facility	901 Wilson St, San Bernardino, 92411
Sunflower Child Care	Child Care Facility	1663 Cleveland St, San Bernardino, 92411
Guadalupe Satellite Child Care	Child Care Facility	1633 W. 5th St, San Bernardino, 92411
Colton City of Child Care Sierra Vista	Child Care Facility	2300 N. Rancho Ave, Colton, 92324
Building Blocks Child Care	Child Care Facility	1203 N. 8th St, Colton, 92324
Cash Family Day Care	Child Care Facility	1213 N. 10th St, Colton, 92324
Noah's Ark 4 Kids Child Care	Child Care Facility	1330 Orange Grove Ave, Colton, 92324
Arrowhead Family Health Center	Medical Center	1543 W. 8th St, San Bernardino, 92411
EMQ Families First	Children's Mental Health Services	572 Arrowhead Ave, San Bernardino, 92401

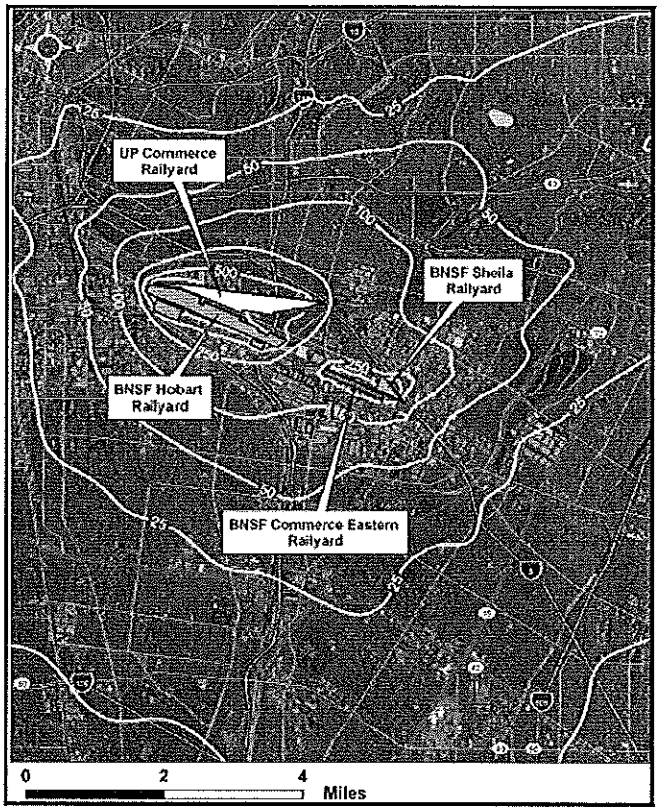

Figure 3: Potential estimated regional cancer risks (chances per a million people) from the Four Commerce Rail Yards (CARB, 2007)

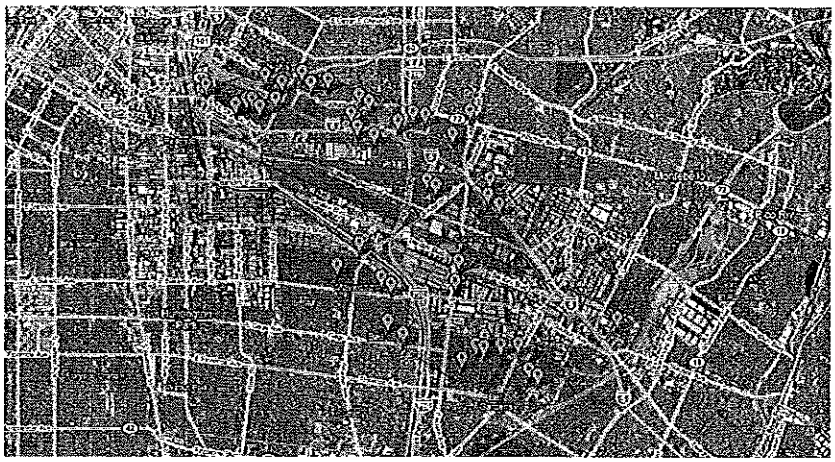

Figure 4: Location of sensitive receptors in relation to approximate one mile radius of the Four Commerce Rail Yards

Table 2: Partial listing of sensitive receptors in a one mile radius of the Four Commerce Rail Yards

Sensitive Receptor	Description	Location
Childtime Learning Center	Preschool	4820 S. Eastern Ave, Commerce, 90040
LA Urban League Head Start	Preschool	1320 S. Concord St, Los Angeles, 90023
Dacotah Street Combination Center	Preschool	3142 Lydia Dr, Los Angeles, 90023

Plaza de La Raza Head Start	Preschool	6620 Telegraph Road, Commerce, 90040
Foundation for Early Childhood	Preschool	1016 S. Fresno St, Los Angeles, 90023
Bell Gardens Preschool Academy	Preschool	6430 Colmar Ave, Bell Gardens, 90201
Tri-city Headstart	Preschool	4756 Slauson Ave, Maywood, 90270
Bell Gardens Christian School	PreK-8 Private School	6262 E. Gage Ave, Bell Gardens, 90201
Resurrection School	PreK-8 Private School	3360 Opal St, Los Angeles, 90023
Laguna Nueva School	K-8 School	6360 S. Garfield Ave, Commerce, 90040
Cristo Viene Christian School	3-12 Private School	3601 E. Whittier Blvd, Los Angeles, 90023
Fishburn Avenue Elementary School	Elementary School	5701 Fishburn Ave, Maywood, 90270
Rosewood Park Elementary School	Elementary School	2353 Commerce Way, Commerce, 90040
Heliotrope Avenue Elementary School	Elementary School	5911 Woodlawn Ave, Maywood, 900270
Bandini Elementary School	Elementary School	2318 Couts Ave, Commerce, 90040
Winter Gardens Elementary School	Elementary School	1277 Clela Ave, Los Angeles, 90022
Eastman Avenue Elementary School	Elementary School	4112 E. Olympic Blvd, Los Angeles, 90023
Christopher Dena Elementary School	Elementary School	1314 S. Dacotah St, Los Angeles, 90023
Maywood Elementary School	Elementary School	5200 Cudahy Ave, Maywood, 90270
Cesar E Chavez Elementary School	Elementary School	6139 Loveland St, Bell Gardens, 90201
Ford Blvd Elementary School	Elementary School	1112 S. Ford Blvd, Los Angeles, 90022
Lorena Street Elementary School	Elementary School	1015 S. Lorena St, Los Angeles, 90023
Robert Louis Stevenson Middle School	Middle School	725 Indiana St, Los Angeles, 90023
Vail High (Continuation) School	High School	1230 S. Vail Ave, Montebello, 90640
Bell Gardens High School	High School	6119 Agra St, Bell Gardens, 90201
Animo Justice Charter High School	High School	5156 Whittier Blvd, Los Angeles, 90022
East Los Angeles Doctors Hospital	Hospital	4060 Whittier Blvd, Los Angeles, 90023
Los Angeles Community Hospital	Hospital	4081 E. Olympic Blvd, Los Angeles, 90023
Molokan Resident Center	Elderly Care Facility	3455 Percy St, Los Angeles, 90023
Colonia Jess Lopez	Elderly Care Facility	2627 E. Olympic Blvd, Los Angeles, 90023
ABC Child Development Center	Child Care Facility	1120 S. McDonnell Ave, Los Angeles, 90022
Perez Family Child Care	Child Care Facility	5835 Bartmus St, Commerce, 90040
Early Childhood Center	Child Care Facility	1340 S. Bonnie Beach Pl, Los Angeles, 90023
Eastman Avenue Children's Center	Child Care Facility	1266 S. Gage Ave, Los Angeles, 90023
Mexican-American Opportunity Foundation Child Care Center	Child Care Facility	972 Goodrich Blvd, Commerce, 90022

In addition, we are concerned that the HHRAs conducted previously for the Commerce and San Bernardino rail yards and others significantly underestimated the risk to children. Diesel particulate matter (DPM) is a carcinogen and contains known mutagens. According to a study by Vom Brocke in 2009, 3-nitrobenzanthrone, one of the components of diesel particulate matter, is mutagenic. Therefore the risk analysis of DPM emissions from the rail yards should consider the impacts to early-life exposure. Consistent with *Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure To Carcinogens* (U.S. EPA, 2005), the risk analysis should have included modifying factors to the unit risk factor of 10 for exposures occurring before the age of 2, and 3 for exposures occurring between the age of 2 and 16. Therefore, the

risk estimates for rail yards such as the 4 Commerce yards and BNSF San Bernardino are likely much greater than where previously estimated.

Furthermore, an issue not fully analyzed in these assessments is the presence of ultrafine particulate matter (UFP) in diesel exhaust. UFPs and fine particles (FPs) are by-products of combustion processes such as those associated with diesel exhaust, representing a significant source of toxic air contaminants (TACs) and may increase respiratory and cardiovascular morbidity and mortality. Inhaled UFPs and FPs can be deposited far into the lungs and can migrate from there into systemic circulation and thus to the heart, as well as more distal organs (Penn, 2005).

There is sufficient reason to believe that UFPs are important because when compared with larger particles, they have orders of magnitudes higher particle number concentration and surface area, and larger concentrations of adsorbed or condensed toxic air pollutants (oxidant gases, organic compounds, transition metals) per unit mass (Sioutas, 2005). Additionally, because they are too small to settle out, UFPs have lifetimes in the atmosphere on the order of days allowing them to be transported over long distances. The impacts from local UFP sources may therefore be measured over greater distances than previously assumed.

In light of the elevated risk based upon emissions from rail yards it is clear additional mitigation measures, should be implemented quickly to reduce the continuing health threat posed to the impacted communities.

Site specific measures are critical. CARB should finalize the still draft "Diesel Particulate Matter Mitigation Plans." These Plans were released over a year ago, providing sufficient time for public comment and regulatory response. Most of the mitigation plans do not call for any further mitigation measures beyond the ones that are already agreed to by BNSF, Union Pacific Railway Company (UP), and the CARB.

In addition, SWAPE encourages the CARB to implement and propose more stringent federal and State guidelines for diesel particulate matter that directly address cancer risk.

In Support Of Comment 2: There are a number of existing options (specifically 1, 2, 5, 7, 11, 21, 35, 36, and 37) that will reduce the criteria PM and nitrous oxides emissions and health risk associated with rail yard emissions to the surrounding communities that are feasible, cost effective, and easily implementable.

The "Technical Options To Achieve Additional Emissions And Risk Reductions From California Locomotives And Rail Yards" report from CARB describes 37 different options for reducing rail yard emissions. The options include enhancement of current administrative controls; retrofitting of existing sources; electrification of rail yard vehicles; new control technologies for locomotives; and, enhancement of barriers surrounding rail yards. Cost estimates to implement each option, number of pounds of emission reduced, and cost effectiveness provided in the report are the basis for conclusions and recommendations within the report.

SWAPE agrees with the CARB that Options 1 (replacement of 152 Tier 0 and older switch locomotives with Tier 3 Ultra-Low Emitting Switch Locomotives), 2 (retrofit of 244 gen-set switch locomotives with nitrous oxides (NOx) and PM matter emission controls), 5 (repower of 400 older medium horsepower locomotives with low-emitting engines), 7 (retrofit of 400 low-emitting medium horsepower locomotives with NOx and PM emission controls) are feasible and cost effective to significantly reduce criteria NOx and PM emissions.

Option 1

- Replace 152 existing Tier 0 and older switch locomotives with gen-set Tier 3 Ultra-Low Emitting Switch Locomotives (ULESLs)
- ULESLs have less than 3.0 g/bhp-hr emissions of NOx and less than 0.1 g/bhp-hr emissions of PM; consume 20-40% less diesel fuel than old medium switch locomotives
- CARB estimated cost to be $1,500,000 per locomotive, so a total cost of $228,000,000
- According to Carl Moyer calculations, cost effectiveness is $3.00/lb for 10 years and $1.79/lb for 20 years

Option 2

- Retrofit 244 gen-set switchers with NOx and PM emission controls (diesel particulate filters (DPF) and/or selective catalytic reducers (SCR))
- Builds on Option 1; all ULESLs will be retrofitted with DPF and SCR when engines are being retrofit
- Can be retrofitted when engine overhauls are done every 10-15 years
- Meet or approach Tier 4 standards
- CARB estimated cost to be $200,000 per locomotive, so a total of $48,800,000
- According to Carl Moyer calculations, cost effectiveness is $4.58/lb for 10 years and $2.73/lb for 20 years

Option 5

- Repower 400 older medium horsepower (MHP) locomotives with low-emitting engines
- Meet or exceed Tier 2 standards –less than 4.0 g/bhp-hr emissions of NOx and less than 0.1 g/bhp-hr emissions of PM, potential reduction of 3% of diesel fuel consumption, reduction of greenhouse gases produced
- CARB estimated cost to be $1,000,000 per locomotive, so a total of $400,000,000
- According to Carl Moyer calculations, cost effectiveness is $1.34/lb for 10 years and $0.80/lb for 20 years

Option 7

- Retrofit the 400 low-emitting MHP locomotives with NOx and PM emission controls (diesel particulate filters (DPF) and/or selective catalytic reducers (SCR))
- Retrofitting low-emitting MHP locomotives only
- Meet or approach Tier 4 standards
- CARB estimated cost to be $500,000 per locomotive, so a total of $200,000,000

- According to Carl Moyer calculations, cost effectiveness is $3.25/lb for 10 years and $1.94 for 20 years

These locomotive options, however, are not the only options that will have a significant impact on PM and NOx emissions and cancer risk at California rail yards. In our opinion, Options 11 (electric-powered yard trucks), 21 (Advanced Locomotive Emissions Control System), 35 (ambient particulate matter monitoring stations), 36 (enhanced truck and locomotive inspection program), and 37 (move rail yard emission sources away from nearby residents) are also feasible and cost effective according to CARB practice (measures with a cost effectiveness calculation up to $50/lb). Utilization of the ARB Carl Moyer Methodology in cost effective calculations depicts the inclusion of grant funding.

Option 11, which consists of revamping all 322 diesel yard trucks into electric-powered yard trucks, would reduce PM and toxic risk to the surrounding communities. If implemented, the trucks would reduce DPM and nitrous oxides emissions from yard trucks from 0.062 tons/year to zero tons/year. The successful testing at the Port of Los Angeles of electric yard trucks shows that it is technically feasible for this option to be utilized. The cost effectiveness of this option is $18.33/lb of NOx and DPM for 2010 emissions, $29.38/lb for 2015 emissions, and $76.90/lb for 2020 emissions.

Option 21 involves installation of an Advanced Locomotive Emission Control System (ALECS) near locations where locomotives are idling and would reduce PM and toxic risk to the surrounding communities. ALECS are stationary control devices (hoods) that reduce DPM emissions. ALECS hoods have been shown to reduce NOx and DPM emissions by 90% during service and idling periods at UP Roseville. An ALECS unit with 12 hoods (at UP Roseville) is estimated to cost $25,000,000. The cost effectiveness is about $23/lb of NOx and PM for 20 years for the UP Roseville rail yard, using Carl Moyer calculations.

Option 35 involves the installation of ambient monitoring stations with Aethelometers and air toxic monitors to measure rail yard DPM and toxic emissions. This option is feasible and critical for demonstrating the effectiveness of mitigation plans. These stations would allow for real-time tracking and monitoring of DPM emissions, as well as measurement of pollutant concentrations to which the public is exposed. Monitoring stations at railyards and offsite should be stationed in locations that mimic exposures to the public. Stations at elevated locations (rooftops, etc) will not adequately measure the exposure of the public. Sampling locations should be identified immediately by CARB following modeling of sources.

SCAQMD's recent and successful MATES III Study (a regional monitoring and risk assessment program), shows that real-time monitoring can be achieved for toxic contaminants present in DPM (see <http://www.aqmd.gov/prdas/matesIII/matesIII.html>. The MATES III Study consists of several elements. These include a monitoring program, an updated emissions inventory of toxic air contaminants, and a modeling effort to characterize risk across the Basin. The study focuses on the carcinogenic risk from exposure to air toxics. That study, unlike reliance on modeling alone, presented risk estimates based upon monitored annualized contaminant concentrations.

MATES III shows that CARB can institute a successful Option 35 monitoring scheme here to track emissions. Further, in addition to the annual exposure, such modeling can be tailored to measure of the intensity of the exposures need to be presented. CARB can use the information learned from the HHRAs about sources, intensity and proximity. Shorter periods (1-hour, 8-hour, and 24-hour) of exposure are more appropriate measures of the intensity of emissions from the railyards on communities. The results should also show the time of day for exposures. High concentration events during periods where most residents are at home (e.g., evenings when families are at home) can be identified.

The cost of each monitoring system is estimated to be about $30,000 to $35,000 – this is very cost-effective given the significant cancer risks at California railyards. Option 35 will allow CARB and local communities to monitor emissions in real time instead of relying solely on modeling.

Option 36 involves an enhanced truck and locomotive inspection program. Stepped up enforcement of idling regulations through CARB staff inspections at the covered rail yards would ensure continuous compliance by the rail lines. This includes heavy duty diesel truck idling and retrofit inspection and enforcement, as well as in connection with CARB rules concerning drayage fleets, locomotive in use compliance testing for federal standards, non-essential and essential locomotive idling, refrigerated units, intrastate locomotive fuel and cargo handling rules. This is particularly true because the Report relies on compliance with the Port Drayage Truck Regulation with regard to analysis of reductions from truck measures in Options 17 to 19 and anti-idling measures set forth in Options 23.

Option 37 is to relocate rail yard emission sources further away from nearby residents. Studies show that a 90% reduction in cancer risk can occur if DPM sources are moved to distances over 1,500 feet from receptors, and cancer risk decreases dramatically with increased distance from the DPM source. (CARB. 2009). The ability to move the location of sources depends on the configuration of each rail yard. In the BNSF San Bernardino Rail Yard HHRA, the highest residential area cancer risk is 3,300 chances in a million along the west intermodal yard's northern edge, and in the Four Commerce Rail Yards HHRA, the point of maximum impact (northwest and south of the UP Commerce and BNSF Hobart rail yards) has an associated cancer risk of 3,000 chances in a million (ARB, 2008, p. 13; ARB, 2007, p. 15). This option directly decreases the cancer risk of the residents living close to the rail yards. Once sources are relocated further from residents, there will be a significant reduction in the cancer risk.

Options 1, 2, 5, and 7 provide significant decreases in PM and NOx emissions from locomotives and should be adopted. However, they do not decrease the overall emissions of the rail yards to a point of *de minimis* risk for the surrounding communities. Options 11, 21, 35, 36, and 37 are focused on improvements to the rail yards themselves, reducing the overall emissions from the rail yards. They should be implemented by CARB for the 18 intermodal and classification railyards in final, site-specific "Diesel Particulate Matter Mitigation Plans."

The combination of the above options (1, 2, 5, 7, 11, 21, 35, 36, and 37) would provide for a significant decrease in PM and NOx emissions from the rail yards and will significantly decreasing cancer risks of nearby residents.

In Support Of Comment 3: Risk reduction estimates contained in the "Technical Options To Achieve Additional Emissions And Risk Reductions From California Locomotives And Rail Yards" may rely on inaccurate growth estimates of rail yard use and risk reductions.

We have identified significant deficiencies in the risk reduction estimates contained in the "Technical Options To Achieve Additional Emissions And Risk Reductions From California Locomotives And Rail Yards" concerning growth and related risk predictions. Growth of the rail yard is inconsistently estimated in the rail yards' "Diesel Particulate Matter Mitigation Plans", which the HHRAs and "Technical Options" base risk estimates upon.

In the 4 Commerce and BNSF San Bernardino rail yard mitigation plans, there is an estimate of less than a 0% to 1.9% per year over increase in activity in the rail yards and a 3% to 4% per year increase in activity in passing mainline traffic (ENVIRON, 2008; Sierra Research, 2008). Yet, according to the Association of American Railroads, rail freight is expected to triple by 2020 (BNSF, 2009). Furthermore, even in a down economy, the American Association of State Highway and Transportation projection states that rail freight is to increase by 55% by 2020 (BNSF, 2009).

Because the growth predictions are not clearly defined in the mitigation plans, the CARB estimated rail yard cancer risks may be inaccurate. Cancer risks for the surrounding areas of the rail yard are based upon the amount of DPM projected to be released by the rail yard for that particular year.

In addition, SWAPE analyzed Figures I-5 and I-6, which predict diesel particulate matter for the eighteen major rail yards in California, in the "Technical Options" document (CARB, 2009, pp. 23-24). These figures show a dramatic decrease of PM and NOx emissions if all of the measures specified in the mitigation plans are implemented. SWAPE believes that this emissions estimate is unrealistic because of the long period of time it takes to retrofit and/or overhaul existing locomotives as explained in the "Technical Options To Achieve Additional Emissions And Risk Reductions From California Locomotives And Rail Yards" (EPA regulations require fleet turnover by 2045). Moreover, it should be confirmed with real monitoring data as set forth in Option 35.

Although the risks estimated in 2015 (10 to 2,500 in a million) are lower than risks estimated in 2005 (40 to 2,500 in a million), risk is still greater than what is acceptable (CARB, 2009, p. 24; EPA, 1989a). In addition, even if the particulate matter emissions are at the proposed lower level of approximately 75 tons/year in 2020, there is still an unacceptable cancer risk

CARB studies have shown that the emissions from diesel related activities cause a significant cancer risk in locations close to the rail yards. In addition, due to the considerable number of sensitive receptors present nearby, including schools, hospitals, and elder care facilities, the CARB should enforce stricter guidelines and Options 1, 2, 5, 7, 11, 21, 35, 36, and 37 so that cancer risk in these areas is minimized.

Sincerely,

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